WHAT IS CLAIMED IS:

1. A method for determining whether an input image is defined in accordance with a luminance-chrominance color space, comprising:

receiving an input image in three dimensional color space, S1, S2 and S3, where S1 is an image value in the first dimension, S2 is an image value in the second dimension and S3 is an image value in the third dimension;

extracting low and high extrema of S1 values in the image;

obtaining deviation of S2 and S3 from a predefined neutral axis for all pixels in the image whose S1 value is either the low or the high extremum;

testing a condition that certain of the deviations are within predetermined thresholds; and

determining, if the condition holds true, that the image is in a luminance-chrominance color space.

2. The method of claim 1, wherein receiving an input image comprises receiving a subset of the entire set of image pixels in the input image.

3. The method of claim 1, wherein extracting the low and high extrema of S1 values in the image comprises:

creating a histogram for S1 denoted by an array HIST, where HIST[i] is the number of image pixels whose S1 value is equal to i;

defining the high extremum i_{high} to be the highest value of i for which HIST[i] is greater than a predetermined threshold K1; and

defining the low extremum i_{low} to be the lowest value of i for which HIST[i] is greater than a predetermined threshold K2.

4. The method of claim 3, wherein obtaining the deviation of S2 and S3 from the neutral axis comprises:

defining an array A1[i] = max(S2, S3) over all pixels for which S1 = i;

defining an array A2[i] = min(S2, S3) over all pixels for which S1 = i; and

defining the deviations from the neutral axis, denoted NEUTRAL, by:

$D1 = abs(NEUTRAL - A1[i_{low}])$;

$D2 = abs(NEUTRAL - A2[i_{high}])$;

$D3 = abs(NEUTRAL - A2[i_{low}])$;

$D4 = abs(NEUTRAL - A1[i_{high}])$.

5. The method of claim 4, wherein NEUTRAL takes on value of 128 in an 8 bit color space encoding.

6. The method of claim 4, wherein testing the condition comprises: testing if D1 is less than T1 and D2 is less than T2, where T1 and T2 are predetermined thresholds.

7. The method of claim 6, wherein testing the condition additionally comprises: testing if D3 is less than T3 and D4 is less than T4, where T3 and T4 are predetermined thresholds.

8. The method of claim 1, further determining that if the condition is false, the image is in an RGB color space.

9. A system for determining whether an input image is defined in accordance with a luminance-chrominance color space, comprising:

an input device for receiving an input image in three dimensional color space, S1, S2 and S3, where S1 is an image value in the first dimension, S2 is an image value in the second dimension and S3 is an image value in the third dimension; and

a processor, responsive to the received input image, for extracting low and high extrema of S1 values in the image; for obtaining deviation of S2 and S3 from a predefined neutral axis for all pixels in the image whose S1 value is either the low or the high extremum; for testing a condition that certain of the deviations are within predetermined thresholds; and

for determining, if the condition holds true, that the image is in a luminance-chrominance color space.

10. The system of claim 9, wherein the input device receives a subset of the entire set of image pixels in the input image.

11. The system of claim 9, wherein the processor extracts the low and high extrema of S1 values in the image by:

creating a histogram for S1 denoted by an array HIST, where HIST[i] is the number of image pixels whose S1 value is equal to i;

defining the high extremum i_{high} to be the highest value of i for which HIST[i] is greater than a predetermined threshold K1; and

defining the low extremum i_{low} to be the lowest value of i for which HIST[i] is greater than a predetermined threshold K2.

12. The system of claim 9, wherein the processor obtains the deviation of S2 and S3 from the neutral axis by:

defining an array A1[i] = max(S2, S3) over all pixels for which S1 = i;

defining an array A2[i] = min(S2, S3) over all pixels for which S1 = i; and

defining the deviations from the neutral axis, denoted NEUTRAL, by:

$D1 = abs(NEUTRAL - A1[i_{low}])$;

$D2 = abs(NEUTRAL - A2[i_{high}])$;

$D3 = abs(NEUTRAL - A2[i_{low}])$;

$D4 = abs(NEUTRAL - A1[i_{high}])$.

13. The system of claim 12, wherein NEUTRAL takes on value of 128 in an 8 bit color space encoding.

14. The system of claim 12, wherein the processor tests the condition by testing if D1 is less than T1 and D2 is less than T2, where T1 and T2 are predetermined thresholds.

15. The system of claim 12, wherein the processor further tests the condition by testing if D3 is less than T3 and D4 is less than T4, where T3 and T4 are predetermined thresholds.

16. The system of claim 9, further determining that if the condition is false, the image is in an RGB color space.